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INTERPLAN



American Planning Association
International Division

Making Great Communities Happen

A Publication of the International Division
of the American Planning Association

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Interplan is the flagship publication of the *APA International Division*. The newsletter provides a space to share stories and information about international planning professionals, efforts, and events. It is published three times per year - once before the National Planning Conference (NPC), once after NPC, and once at the end of the calendar year.

To submit articles, news, and photos, please review the [editorial guidelines](#) and submit through the [online submission portal](#).

Over the past three years as Chair, I have done—at least I hope—some good things. I have also made blunders (as in a game of chess), missed opportunities, and learned lessons along the way. If I can do just one thing right in the final year of my term, I hope it is this: Focus on what the Division can do to facilitate meaningful knowledge sharing among planners around the world, in ways that genuinely make communities better. By “meaningful,” I mean work that has one or more of the following qualities:

- Real potential to create a positive impact for our profession and the communities we serve.
- Easy to access, search, and retrieve, without unnecessary barriers or gatekeeping.
- Encourages two-way communication and enables feedback loops, allowing ideas to evolve through shared learning.
- It can scale through volunteer effort, gaining efficiencies as it grows, and can be sustained by the Division without heavy financial dependence.
- Produces transferable insight, lessons, methods, and tools that others can realistically adapt to their own contexts.

I believe InterPlan is one of the answers. It is an informative, open, and stable platform made possible by the dedication of our editor, Sky Tallman, and many contributors. In the years ahead, I hope InterPlan becomes the world’s best digital publication for planners — practical, authentic, and straightforward. No fluff. No BS.

As I write this on January 1, 2026, I recognize that I have become more nonchalant about resolutions as I get older, but to help me move forward, I’m making the following resolutions this year: Less YouTube. Less news. Eat less (especially at night). Spend more time doing nothing. Keep playing tennis with Annie. Indeed, it is these simple things that impact my quality of life and give me the peace of mind to be able to dedicate myself to the complex challenges that come up in my professional life. It is in those moments of turning away from the convenient distractions at my disposal, in the simple act of doing nothing, where, though the richness of dialogue with oneself, that we can tap into the wellspring of creativity that lies within each of us. And as much as planners like to talk about creating community, community doesn’t just happen, it is cultivated through the time we dedicate to others, through simple acts like playing tennis and all of the ways that a healthy lifestyle with a little less news and YouTube are part of the most basic ingredient of community: time spent connecting with people.

The Division is starting the year with a survey asking the following two questions:

1. What is one way the International Division can improve meaningful knowledge sharing among planners around the world?
2. What is a planning-related project, area of policy or practice has inspired you or that you would like to learn more about this year? (And what cities or countries are leading the way?)

You are welcome to share your answer at International.Planning.Org/2026.

The Division exists to serve you—and together, we serve communities around the world.

Happy New Year!

Jing Zhang

Chair, the International Division of American Planning Association

Announcements

| **APA ID Monthly Meeting**

Monthly on the first Thursday | 7:00 – 8:30 pm EST

Host: APA ID Executive Board

Please email jing@planning.community, if you are interested in joining the meeting.

| **74th ITPI National Town & Country Planners Conference**

Ahmedabad–Gandhinagar, Gujarat.

6th–8th February 2026 in

This year's theme: "Pro-Active Regional Planning & Development to Usher Viksit Bharat"

The conference will bring together leading planners, researchers, policymakers, and practitioners to discuss transformative regional strategies that can shape India's journey toward Viksit Bharat.

| **PIA Planning Excellence Awards**

Planning Institute of Australia announces Planning Excellence Awards:

<https://planning.org.au/pia/news-resources/articles/latest-updates/NATIONAL/planning-awards-showcase-housing-done-well.aspx>

| **ISOCARP Gerd Albers awards**

- **Best Article:** Jose Antonio Lara-Hernandez- "From Segregation to Inclusion: Children's Engagement in Urban Public Spaces"
- **Best Book:** Evan Shieh- "Autonomous Urbanism: Towards a New Transitopia"
- **Special Mention:** Anna Hurlimann et al. - "Facilitating climate change action across built environment life stages – perspectives from built environment professionals"

See more at: <https://isocarp.org/activities/awards/gerd-albers-award/2025-winners-gerd-albers-award/>

| **CALL FOR PAPERS - ICCAUA2026 CONFERENCE**

Istanbul,Turkey. 7-8 May 2026. 9th International Conference of Contemporary Affairs in Architecture and Urbanism

Abstract Submission Deadline: 7 January 2026. Website: www.iccaua.com

Barrio Mugica and socio-urban integration: from the “slum” myth to an open-city model

Felipe Vera and Carina Onorato Bulat

FOR DECADES, SAYING “Villa 31” was synonymous with exclusion, precariousness and conflict in the heart of Buenos Aires, Argentina. Today, the Padre Carlos Mugica neighborhood has become a reference point whenever we talk about socio-urban integration and about how cities can transform their edges without displacing communities. The experience of Villa 31 shows something crucial for Latin America: self-built neighborhoods are not a mistake to be corrected, but a starting point for building a fairer city.

Elsa’s story helps us understand the depth of that transformation. Born in a makeshift tin and cardboard house in the old settlement, her family of migrants from Argentina’s northeast, went through the forced evictions of the 1970s and later returned, when many families reoccupied the territory despite repeated eviction attempts. Over the years, Elsa became head of household, a single mother, a hotel worker in the city center, and a neighbor in a barrio that was beginning to change: better construction quality, access to basic services, new streets, public spaces, community facilities, and economic opportunities that had not existed before.

In a context where numbers often overshadow stories, Elsa’s case is a reminder that behind every figure there are lives in motion. And the figures matter: globally, close to a quarter of the urban population lives in self-built neighborhoods; in Latin America and the Caribbean, this describes around 18% of city dwellers. The region is one of the most urbanized on the planet, with nearly 80% of its population living in cities. The speed of that process has left deep marks including a large accumulated housing deficit, an irregular pattern of expansion, and a structural dependence on self-construction as the main way to access urban land.

Argentina is no exception. The National Registry of Popular Neighborhoods identifies more than 6,400 self-built barrios housing over one million families,

87% of which have been consolidated for more than twenty years. These are not provisional camps but consolidated urban fabrics, with street networks, active popular economies, care networks, and multiple ties to the rest of the city, even if they often remain invisible in traditional statistics. Closing the country’s housing deficit through direct investment alone would require budgets up to thirty times higher than current levels, confirming that the solutions require thinking beyond the classical logic of public housing provision.

I propose two key conceptual shifts. The first is to describe these places as “self-built neighborhoods” instead of “informal settlements”. The shift is not only semantic. The first term highlights the communit’s organizational capacity, the incremental effort of families, progressive densification, the creation of productive units, and the strengthening of the popular economy. The second focuses on what is missing: the lack of services, clear title to land, and building standards. Naming these territories as “self-built” opens the door to constructive intervention by recognizing their value and not only their deficits; to seeing them as an urban and social fabric that already exists and can be integrated, instead of thinking they should be erased or replaced.

The trajectory of Barrio Mugica illustrates how intervention paradigms in Latin America have evolved. First came the era of eradication: mass evictions, relocation of families to distant peripheries, destruction of community networks in the name of protecting property rights. In the 1970s, 97% of families along the route of the Illia Highway were expelled to make way for its construction. Later came the “radication” policies, which sought to “normalize” the barrio by bringing it closer to the standards of the formal city: opening streets, installing service networks, and regularizing land tenure, without questioning too much the economic structures that sustained everyday life.

The most recent shift is toward socio-urban integration. Instead of focusing only on the physical container, the program deployed in Mugica assumes that the central problem is not the neighborhood’s shape, but the economic exclusion of its residents. Infrastructure becomes a means to a broader end: creating opportunities so that families can increase their income, access jobs, education, and financial services, and remain in the planned city without becoming trapped in new cycles of precariousness. The change of logic is clear: moving from “improving houses” to “expanding futures”.

The publication also shows how self-built neighborhoods are being reshaped by at least three forces: accelerated and unequal urban growth, intensified migration and the impacts of climate change. The region's large cities absorb thousands of people every day, while the formal housing market fails to offer affordable solutions. In this scenario, many families are pushed out from the planned city towards self-built barrios, seeking places where they can secure their own roof, even if only in incremental steps.

Stories like those of Juan and María Rosa, who built floor upon floor to house their family and later renters, reveal the logic of the urban popular economy: homes that combine living space and work space, rooms that are rented out to generate income, workshops and small businesses that occupy parts of the house. Far from being a "problem" to be eradicated, this capacity for adaptation and production becomes a key asset when public policy chooses to integrate and improve it rather than deny it. Socio-urban integration, as implemented in Mugica, aims precisely at that: strengthening what already exists, reducing risks, and opening more doors to the labor market and the formal city.

The challenge is immense. With nearly one billion people living in self-built neighborhoods worldwide and projections suggesting that the numbers will keep growing, there is no room for fragmented responses. The experience of Barrio Mugica offers a living laboratory to rethink housing, land, and urban development policies in Latin America. Perhaps its greatest contribution is to demonstrate that socio-urban integration is not a symbolic gesture, but a strategic bet: when it comes to breaking intergenerational poverty traps, the city can either be part of the problem or part of the solution.

If you work in urban management, housing policy, or social development, or if you simply want to understand how a city can transform itself from the margins inwards, the case of the Padre Carlos Mugica neighborhood provides essential insights. I invite you to read the complete publication on this socio-urban integration experience, which includes detailed data, a step-by-step account of the process, and key lessons for other cities in the region. There you'll get the full picture of a transformation that may have started in one neighborhood, but is already reshaping how we imagine the entire city.



Access the full publication here:

<https://publications.iadb.org/es/barrio-mugica-el-inicio-de-una-operacion-transformadora>

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United Kingdom

Urban retrofit: commercial-to-residential conversion as a strategy for climate resilient city building.

Jeffrey Biggar¹ and James White

Retrofit and deep energy retrofit are now widely used terms in the professional planning lexicon to describe the complex process of adapting buildings to improve their energy efficiency and expedite decarbonisation. Across Canada, various financial incentives and technical support programs are available to building owners looking to undertake retrofitting. Rightly so. Buildings account for a significant 11.9% of all greenhouse gas (GHG) emissions, while transportation—including how people move within and between cities—contributes an additional 22.6%. Together, buildings and transportation are responsible for over one-third of Canada's total emissions.

¹ Corresponding author: Jeffrey.biggars@dal.ca

Although retrofitting buildings has understandably been a primary focus of climate action, these figures highlight that decarbonizing the wider built environment will be ineffective if efforts remain confined to individual buildings alone. Just as cities are more than the sum of their buildings, effective urban climate policy must extend beyond the building envelope to include broader strategies for the public realm.

We argue that the concept of ‘urban retrofit’ provides a roadmap for comprehensive action on repairing existing places, curbing sprawl, and creating opportunities for Canadians to lead more sustainable lifestyles. Urban retrofitting includes the work of climate-conscious developers and communities already actively working across Canada – from densifying neighbourhoods with medium-scale housing and encouraging mixed use development, to improving public transportation and constructing bike lanes, and widening access to community green spaces. We use this framing to explore an emerging urban retrofitting trend in Canadian cities: the conversion of underutilised commercial space into purpose-built rentals. We also highlight some of the possible drawbacks of conversion that planners might want to reflect upon further.

Commercial to residential conversions – a new urban retrofit model for climate resiliency?

This article was inspired by a 2025 study tour of Canadian cities organised by [Urban Retrofit](#), a UK-based research projects funded by the [Economic and Social Research Council](#)¹. The study tour brought a small group of senior UK planners and academics to visit retrofitting exemplars in Halifax, Montreal, Toronto, and Hamilton with the aim of creating new connections with Canadian planners, developers and community-based practitioners.

Our stop in Halifax focused on commercial-to-residential conversions. Transforming a commercial building into residential apartments is a somewhat textbook example of urban retrofit, as it requires substantial modification of an existing structure that is already embedded in the urban fabric. This type of conversion typically involves some level of deep

¹ Urban Retrofit is studying approaches to place adaptation through a planning and development lens, and, in Canada, it is partnered with Dalhousie University and the Canadian Institute of Planners. These relationships form part of a wider international effort to incubate ideas diffusion between planning practitioners in UK cities with their counterparts elsewhere

energy retrofit, while also avoiding the need to demolish a large building containing significant embodied carbon. It follows a similar logic to adaptive reuse—repurposing an existing structure for a new function rather than tearing it down—but takes the concept a step further: To what extent is the building integrated into the broader public realm? And, how can this integration support a multi-scalar approach to retrofitting the built environment that is essential for climate-ready, resilient cities?

The drivers behind commercial-to-residential development in Halifax

Like many Canadian downtowns, Halifax and Dartmouth have struggled with commercial vacancies post-pandemic:

- The Halifax region has a better-than-average office vacancy rate of 12%, compared to the 17% national average, but it is notably higher in downtown Halifax (16%) and downtown Dartmouth (16%) than it is in the Halifax metro suburbs (10%).
- Vacancies are also highest in Halifax’s ‘Class B’ and ‘Class C’ buildings in the downtown core (CBRE, 2025), most of which were built between the 1950s and the 1990s in a modernist or brutalist style of concrete construction – something that makes them very suitable for adaptation and conversion.

As office vacancy rates have increased, the Halifax region has simultaneously experienced unprecedented population growth:

- Since 2016, population growth, which historically sat around 1%, has increased annually by between 3% and 4% (although it is has recently contracted).
- House prices have more than doubled over the decade in response to demand, increasing by 4.7% in 2024 alone. This has led to a housing affordability and supply crisis.
- A vacancy rate of just 1% has also led to rising rents. From 2015 to 2025, rents increased year-on-year by approximately 5.9% and between 2022-2023 rose by 11.8%.
- Gradual interest rate reductions by the Bank of Canada, plus the federal government’s decision to stop charging HST (Harmonised Sales Tax)

on purpose-built rental accommodation have started to improve the viability of conversion.

These drivers, coupled with a buoyant construction market, makes the Halifax region a particularly viable place to scale-up commercial-to-residential conversions and the downtown character of Halifax and Dartmouth is evolving as a result.

Planning changes: Piloting commercial-to-residential conversions in Halifax

Insufficient housing supply across Canada has led the federal government to establish a Housing Accelerator Fund (HAF) via Canada Mortgage and Housing Corporation (CMHC). Under the scheme, Halifax received funds over three years to accelerate supply. In 2024, as part of the HAF program, CMHC established a 'non-residential to residential conversion' pilot with the aim of supporting the Halifax region's efforts to "remove regulatory barriers" for conversions¹. Planning policy amendments have revised the eligibility criteria for Halifax's affordable housing grant program, which is funded from density bonuses, to include a new funding stream for conversion projects by non-profit developers. Previously, the program only supported new construction. To improve viability, the revised criteria also exempt affordable conversions from development charges to help bring down construction costs.

Halifax planners note that most private developers, who are not eligible for the pilot scheme, have concluded that conversions are not financially viable, let alone with the inclusion of affordable units (personal communication, July 11th). Legislation also restricts the city from granting tax concessions or other forms of direct financial assistance to any business entity. Therefore, in the right circumstances, planners see conversions led by non-profits as an opportunity to maximise public benefit through the delivery of affordable housing. As part of the pilot, planners hope to better understand the cost implications of converting different building types into residential units and to ascertain what planning and design considerations might need to be prioritised as the non-profit pilot program begins to scale up.

The conversion process in action in Halifax and Dartmouth

In Halifax, our study tour focused on a series of conversion projects by an innovative local developer called Sidewalk that is hoping to demonstrate that converting commercial office buildings to residential accommodation is a viable real proposition in downtown Halifax and downtown Dartmouth. Full of enthusiasm about the placemaking potential of office-to-residential conversions, Sidewalk's President Joe Nickerson told us that when his firm purchased a 1970s 14-storey commercial office tower in downtown Halifax, it had an occupancy rate of just 40%. This meant that much of the conversion work was completed while the office tenants continued to use the building. To better understand the environmental viability for conversions the firm commissioned their own embodied carbon analysis which showed significantly less carbon emitted than in a new-build scenario. This level of attention to climate change and downtown vibrancy stood out to study tour participants including those HRM planners who were keen to draw lessons for the wider pilot program.

Rebranded as Agency Art Lofts, the building will provide open-plan living, high-end appliances, polished concrete floors, exposed ductwork and luxury amenities, such as a gym, spa, and private cinema. Regulatory planning changes, such as the removal of minimum parking requirements, combined with special retrofit financing from a major financial institution, enabled Sidewalk to avoid compromising on their product. That said,

AGENCY ARTS LOFT

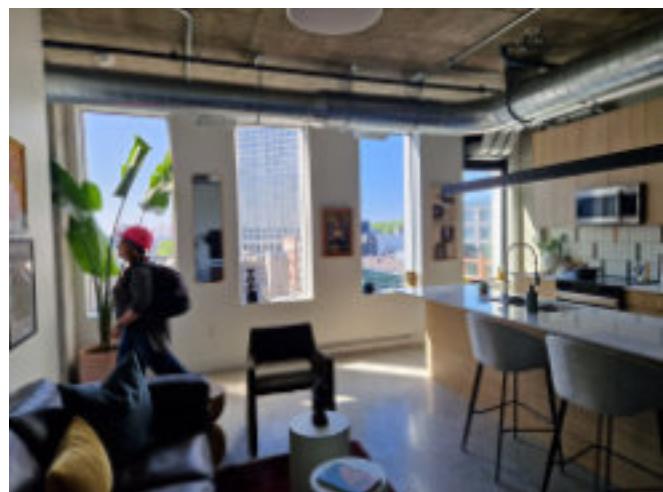


Figure 1: A 14-storey commercial office tower in its final stages of completion marketed as a long-term rental product pitched at a Gen Z professional crowd. Source: authors

¹ Canada Mortgage and Housing Corporation, 2025. HAF Agreement and Action Plan Summary. Halifax Regional Municipality, NS. Canada Mortgage and Housing Corporation, Ottawa.

Sidewalk initially planned to include 38 affordable units in the 140 unit building from a \$1.9 million subsidy from the province of Nova Scotia, however, the “math did not pencil out” in the pro forma, according to Nickerson.

Dartmouth has a more affordable rental market than Halifax and, as a result Sidewalk’s projects are priced at the middle of the market. At ‘The Shuffle’ we saw how the design intent was to maximise space and focus on rentals for people starting out on the property ladder. The apartment we visited followed the floor plan of the previous hotel and was, as a result, undoubtedly a ‘micro’ living space. Essential fixtures and fittings, including a pull-down murphy bed and mini kitchen, were built-in, while the bathroom was positioned by the front door to take advantage of the existing hotel plumbing and drainage. Residents also had access to a common rooftop, however, there were none of the upscale amenities we heard about at the Agency Art Lofts.

Our next stop was a five-story office tower just a few blocks from The Shuffle, located on vibrant Portland Street. The building was last occupied by RBC Royal Bank. Still in the early stages of redevelopment, the project offered a first-hand look at the distinct physical skeleton of a commercial office building. Joe emphasized Sidewalk’s commitment to ensuring that the building contributes to the vibrancy of the downtown and enhances the immediate streetscape.

Commercial-to-residential conversions in UK cities: Lessons and Pitfalls

The UK planning officials, impressed by what they saw, were keen to highlight some of the significant planning failings associated with commercial-to-residential conversions in the UK. The rationale for commercial-to-residential conversions in the UK is like that in Canada. Working-from-home trends, which accelerated during Covid, have led to high office vacancies, plus a housing shortage has created an affordability crisis in many larger cities. Meanwhile, planning policies increasingly favour urban retrofitting by promoting denser mixed-use development in city centres. Together, these factors have supported the emergence of a burgeoning



Figure 3: Reading-Kings Reach office conversion UK
Source: Nicola Livingstone

‘build-to-rent’ sector – purpose-built rental accommodation in Canadian terms – which has experienced sustained growth throughout the early 2020s.

English cities have seen more conversions than their counterparts in Scotland, Wales and Northern Ireland because, since 2015, developers have been allowed to bypass planning permission and use permitted developments rights, the equivalent of as-of-right development, to convert commercial space. This change has created a means of expediting the supply of homes for rent, while also channelling investment into struggling city centres. Since 2015, over 95,000 units have been created in converted commercial buildings in England without the need for planning permission. This trend appears to be continuing on an upward trajectory. Across the UK’s regional cities, 900,000 square feet of office space was purchased between 2022 and 2024 for conversion.

Yet the proof is in the pudding: a significant number of these commercial-to-residential conversions have been delivered by unscrupulous developers who have built “damp, poorly lit, cramped, noisy, insecure and isolated”¹ homes that may not have received planning permission had a full application been required. Legislation has recently been tightened to address some of these problems, but critics say it has not gone far enough. Low-quality living space created in poorly regulated conversions

¹ Town and Country Planning Association, 2024. Permitted development, housing and health: a review of national policy and regulations. Town and Country Planning Association, London.

has a negative impact on the health and wellbeing of residents and, without the need for full planning permission, there is no mechanism for municipalities to demand developer contributions for housing or infrastructure.

What stood out most in from the study tour in both Halifax and the lessons from the UK was that the retrofitting potential of vacant offices has been framed less around climate benefits and more around accelerating the delivery of affordable housing. The emphasis has largely been on streamlining policy and regulation to kick-start development and any urban sustainability benefits have tended to be an accidental, if welcome, consequence. What is particularly troubling, however, is that the drive to water down regulation and kick start housing delivery in England has not consistently produced successful or sustainable planning outcomes, let alone the kind of equitable and just approach to urban retrofitting that would reflect good planning.

Conclusion

Commercial-to-residential conversions are but one example of a holistic and resilient approach to planned urban retrofit. They have the potential to deliver energy efficient improvements to existing buildings while also offering a viable prospect for conversion because of their location in urban areas – often downtown – where the opportunities for residents to lead more sustainable lifestyles are enabled by established high densities, good public transportation connections and walkable streets.

The commercial-to-residential projects we visited in Halifax and Dartmouth certainly paint a broadly positive picture and, for the UK planning officials on the study tour, demonstrated a possible alternative to some of the regulatory, planning and design failures experienced in England. Sidewalk certainly presents itself as a socially conscious developer with an apparently genuine interest in delivering high-quality conversions that reduce GHG emissions and kickstart the wider revitalisation of urban neighbourhoods.

Of course, while the market for purpose-built rental accommodation in the Halifax region is currently buoyant, things can quickly change. Viability for affordability remains a crucial concern. If developers like Sidewalk attempt to leverage all available government funds to add affordable units only to remove them due to viability concerns, as happened on the Agency Art Lofts project, then the role that commercial-to-residential conversions can

play in genuinely delivering housing affordability is questionable. To avoid some of the troubling outcomes witnessed in English cities, regulations must allow planners to scrutinize the type and quality of accommodation. While we saw some high-quality living spaces on our tour with Sidewalk, the unit sizes in The Shuffle were very small, raising questions about space standards for those with lower-incomes and whether hotel-like apartments are sufficiently suitable as long-term living spaces.

As conversions start to scale, planners must continue to weigh the positives and negatives as they experiment with policies and practices that accelerate housing delivery and support efforts to retrofit cities for climate resiliency.



Jeffrey Biggar is an Assistant Professor of Planning at Dalhousie University where he teaches and conducts research on development planning from an equity perspective. Jeffrey has authored numerous academic, policy, and media articles on urban development and policy, including on the role of private developer contributions in shaping social returns in land development, barriers to implementing density in Canadian second-tier cities, and the role of place and social infrastructure in creating welcoming cities.

James White is Professor of Planning and Urban Design at the University of Glasgow where he teaches on urban design and the planning system. He is interested in the theory and application of design governance and place adaptation for sustainable development. His research focuses on the tools and mechanisms that planners use to shape the design of new and existing places. James's recent published work includes studies of housing design quality in the four UK nations, the experience economy on the UK high street, and the future of large city centre shopping malls.

CPACE as Part of The Answer to Rental Housing Affordability

Bert Belanger

Every week, a CRE publication contains a story noting that 9 out of 10 markets in America have a need for more affordable housing units. Switching to an “ALL BILLS PAID” mindset, and using CPACE financing, can help.

Selling PACE after 40 years in CRE Development

In early 2021, after a 40 year career as a real estate lawyer, consultant and developer focused on affordable housing, I began “selling money” - sourcing capital for PACE Equity, a Milwaukee based private debt firm focused on providing CPACE (Commercial Property Assessed Clean Energy) funding. Since CPACE was new to my home state of Oklahoma, I was generally unfamiliar with its characteristics, but the practice of “green building” was something I had experienced first-hand.

I initially hoped that my mixture of experience might make me a unicorn – a guy who knew how to meld obtuse government subsidized housing tools with CPACE, all for the greater good. However, I have quickly learned that mixing CPACE and the government-assisted housing financing tools is a non-starter.

Why? Because cash flows are thin (by design), leaving no room for debt service beyond a small senior loan.

Back in 1992, as an affordable housing developer using LIHTCs (the Federal Low Income Housing Tax Credit), I discovered what I will call “the utility cost conundrum” – a truism that every commercial and residential landlord intuitively knows. That is, in most lease structures, the tenant controls, consumes and pays for the costs of using water, natural gas and electricity, so the landlord has ZERO financial interest (or concern) about their building’s energy (or water) efficiency.

Real Deals and Real Savings

Way back in 1996, I converted twelve 1920s brownstones into 96 one-bedroom LIHTC units, and discovered “HUD Utility Allowances”. These allowances are intended to estimate the average monthly utility costs for apartment renters. In the Brighton, (located in the historic Paseo neighborhood in OKC), we had gutted the old buildings “to the studs” and created very “tight” units with blown insulation, new windows and energy-efficient MEP components.

The key ingredient to the Brighton’s success was that we chose to rent the apartments on a “bills paid” basis.

I soon learned that the actual utility costs within each apartment in Brighton was less than 50% of the HUD Utility Allowance, dropping this savings (nearly \$100 per unit per month) straight to the bottom-line NOI. Thus, even with a below market rent “cap” in place for our 96 units, we were able to enhance annual cash flow by over \$155,200.

That was real money.

Later, in an OKC commercial building retrofit in 2006, I installed a closed-loop Geothermal heat pump system, and my earlier lesson in energy/utility cost savings was reinforced; while the per ton installation cost of Geo-thermal was nearly 3x over a conventional split system package unit, I saw a 60% utility cost savings, again using a “gross lease/bills paid” structure with each commercial tenant.

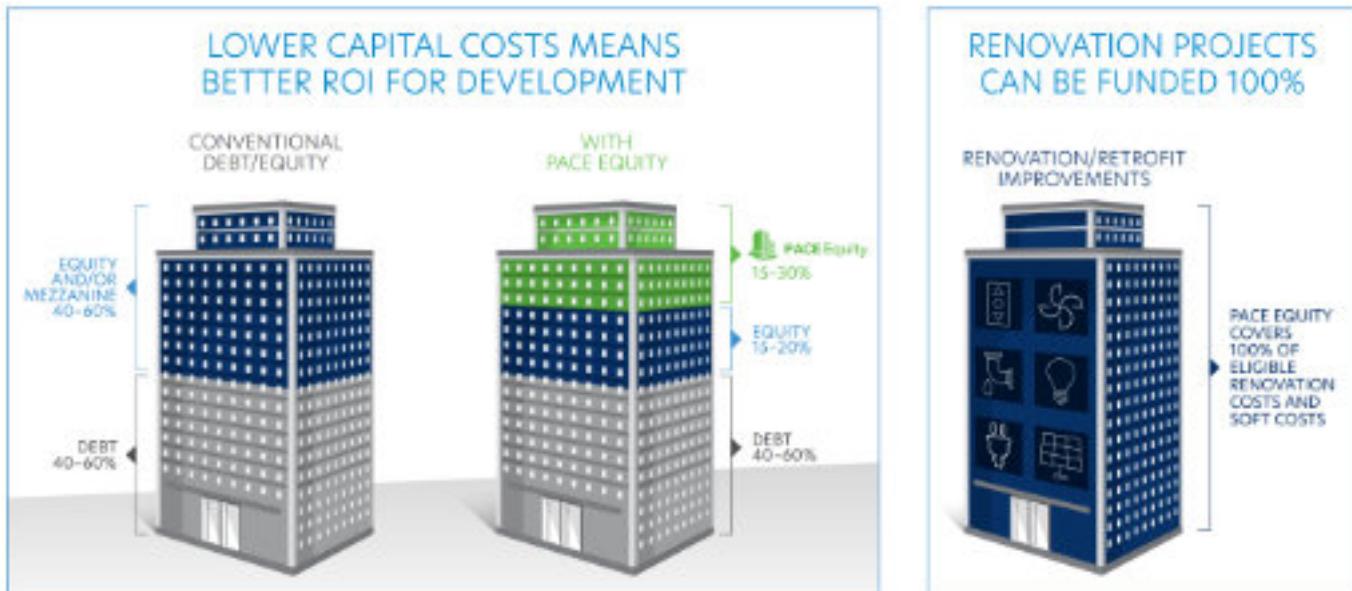
Again, real money.

Subsidies are Not Enough, Nor Sustainable

Today, I am pondering how these lessons might translate to making housing more affordable on a systematic basis.

We have seen government subsidized programs (HUD, USDA, LIHTC and other block grant or loan programs) generate hundreds of thousands of new and renovated housing units across America, but this has not kept pace with the growing numbers of current and new households that will have to pay more than 30% of their income to house themselves.

Moreover, except where “green building codes” are imposed, this “workforce” or “attainable” housing stock is generally not energy (or water) efficient, nor resilient, and will age poorly and deteriorate as time



goes by. The affordability of these units will undoubtedly worsen over time, which will be exacerbated with rising insurance and utility costs.

A Better Approach for More NOAH Units

To bolster the supply of affordable rentals that can stay affordable, focused on NOAH ("Naturally Occurring Affordable Housing"), a better approach requires several actions, not by government, but by those of us in the multifamily business, in tandem—

- Aligning the interests of residential landlords and tenants on energy and water consumption, through an “all bills paid” leasing structure;
- Incorporating in Multifamily and BTR projects readily available “green” design and building components, including solar, geo-thermal, water saving and recycling, Low E windows, ICF, SIPs panels, sunshades and other modular systems, and sub-metering (to identify over-consumption);
- Using CPACE financing to finance these more robust, resilient components over their full Useful Life, on lower, fixed rate terms; and
- Leveraging (and potentially sharing between landlord and tenant) these incremental utility cost savings.

Can such an approach really impact the project NOI enough to make a difference? Consider a typical stick frame new build multi-family complex of 200 units:

- Average Estimated Monthly Utility Cost of $\$400 \times 200 \text{ units} \times 12 \text{ months} = \$960,000$
- Hard Cost Budget Based on Traditional Design – $\$41,000,000$
- Incremental Cost for Geo and Solar – 3% of $\$41M = \$1,230,000$
- Impact on Out of Pocket Utility Costs – Reduced to \$0; if shared 50/50 by LL&T, NOI increased by $480,000/\text{year}$; at 7% cap rate, this amounts to a value increase of $\$6.8M$

The Bottom Line - the CPACE industry in general, and PACE Equity funding in particular, can help remake and rapidly expand the entire genre of NOAH, with developers and financiers collaborating to re-engineer both the physical design and the financial structure, including “All Bills Paid” leasing. And, consequently, to make a big dent in the Nation’s affordable rental housing deficit. No government assistance or meddling needed; only the natural workings of capitalism. What a concept!

As John Belushi famously inquired in “Animal House” – “Who’s with me?”



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Colombia

Car-free City: Puerto Nariño

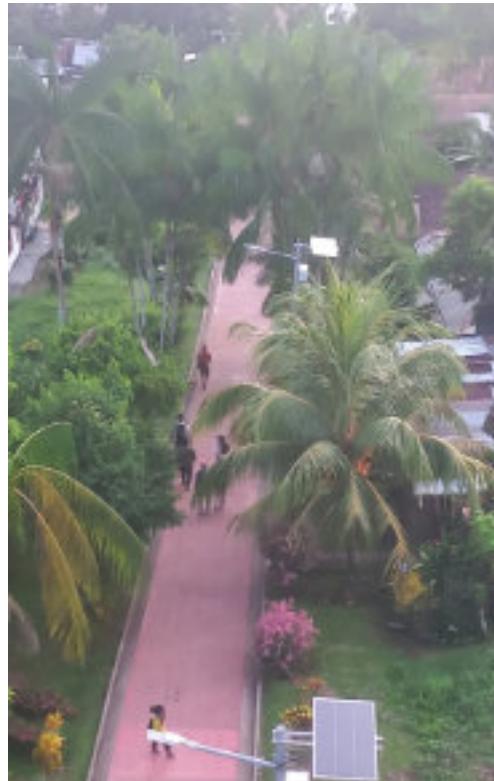
Sky Tallman

Puerto Nariño is a city like no other. Nestled upon steep hills where the river Loretoyacu meets the Amazon, it is a city without cars or motorcycles. The impact is significant: a walk through town is punctuated by the sounds of birds rather than motors, and kids appropriate space playing in the streets, often unsupervised. Intersections function like little plazas, decorated with large planters that also serve as benches and public art installations highlighting local species that give a fun backdrop for tourists taking pictures. In the evenings, street vendors set up grills and tables at one of the intersections where people eat and hang out, watching the slow flow of passers by.

As most of us commute to work in a car, we may pass many of the same people every day without recognizing any of them, but in Puerto Nariño, the absence of windshields and high velocities means that you recognize and greet all of the folks you pass. The result is streets that hum with conversations, kids playing, and the sound of birds singing. Even as a visitor, I found myself drawn into conversations with strangers while walking down the street – a rare occurrence in other places.

Nearly the entire population is indigenous, belonging to the Ticuna, Cocama and Yagua ethnic groups, and when I asked the town engineer what aspect of the laws and city regulations reflected the influence of the traditional communities and cultures, the answer was clear -- the car-free stance is rooted in an effort to preserve an aspect of the traditional way of life in this part of the world.

There was a project in 2016 to build an improved trail to San Martin de Amacayacu, crossing about seven km of jungle, and involving extensive bridges and elevated walkways. The project hardly lasted a year before succumbing to rot, most likely because the contractor hired to build it did not use the types of wood stated in the construction plans. Without a clear maintenance agreement, the new infrastructure fell apart, and the connection has devolved to its unimproved state. One day, some locals say, the path will be paved all the way to Leticia, some 75 km downstream -- at which point,



Traffic along a main street in Puerto Nariño. Source: author.

it will be impossible to keep cars and motorcycles out.

In a context where most villages are connected primarily by water, the network of streets extends to connect a number of nearby communities on reservation land surrounding the town, none of which are motorized. Today, the paved network is being extended to another nearby (and car-free) community, San Francisco, previously accessed primarily by river, to create land access to the port and to extend the touristic market. The project will extend the paved network by around 3.6 km. But in a town without cars, there is also no machinery to build roads, so the earthworks of building a road, cutting banks and culverts and digging down and compacting the soil where the cement will be poured, is done manually. Originally anticipated to take seven months to complete in 2023, the project is due to be finished by the end of January of 2026.

The two exceptions to the no-vehicle rule are the trash collection service, which is a wagon pulled by a Kubota tractor, and a tuk-tuk ambulance. The streets are paved with a printed red brick pattern and the design standards for the widest streets measure only 2.5 meters wide (~8 ft) in a right-of-way of 5 meters, leaving space for trees and plants between the streets and facades. The street design standards allow main streets with a minimum of 2 meters (6 ft) of pavement, and side streets can be built as narrow as 0.9 meters of pavement. These



Left: one of the neighborhood-scale water-treatment plants. Center: example of vernacular architecture. Right: Intersplanters create attractive public space in intersections throughout town. Source: author.

side streets often serve as access to just a few homes off a main route. With lower maintenance costs for narrow streets that don't have to be designed for heavy traffic, the road network is in excellent condition throughout town.

In a region defined by an abundance of water, potable water can be hard to find. To address this, Puerto Nariño built three public potable water stations located throughout the town where people can fill their water containers. This is where everyone, from restaurants to families come for their drinking water. The systems are relatively small – each large enough to supply a neighborhood of a few thousand people. In the rainy season, most people rely on rainwater collection for daily needs, but in the dry season, these projects provide a critical lifeline to the community. Like many infrastructure projects in remote Amazonian communities, outside philanthropical support was an essential ingredient in project financing. In this case, the construction costs were augmented with international financial support led by the Leticia-based NGO, Entropika.

Imagine if every town or city that is unable to provide potable water to each building would implement distributed water treatment plants to provide potable water to neighborhoods. In addition to savings on cost and dependence on private water suppliers, providing public water fountains saves an enormous amount of plastic. In nearby Leticia, drinking water is essentially privatized, and jugs have to be filled at costly filling stations, otherwise every act of hydration produces plastic trash. Historically, one of the important functions of public plazas was as locations of fountains that served as a neighborhood's source of water. Where potable water doesn't flow from every faucet,

reviving this role to the life of plazas could greatly improve public health and the quality of life.

A restauranteur along the riviera said that during two or three months of the year, when the river rises another four or five meters, the park is submerged and the river reaches up to the stilts supporting his restaurant. "It's like, what's that city that's always flooded?... Venice. Everybody passes up and down the street in canoes." One year, the water rose particularly high, and reached waist level inside the restaurant, and he had to close for a few months. The manholes in the low areas rise six feet above the sidewalk, reflecting the ebb and flow of the river.

Another interesting initiative in Puerto Nariño, currently before the town council, is to promote the local architectural vernacular by changing the local zoning, which currently allows up to two stories in cement, to allowing only the first floor to be built in cement, and requiring second stories to be built of wood – the traditional building material, but one that brings more challenges with durability in this humid climate. Perhaps inspired by distaste for a major 2-storey concrete construction project along the riviera.

Not only are there no cars, but the town also stands out for its Basura Cero, or 'Zero Trash' initiative. In addition to having a trash collection service, the town has promoted a culture of stewardship and sustainability that has made the public spaces attractive and clean, and making the town stand out among its regional peers where plastic paves the banks of streams and punctuates public and wild spaces. About the only waste on most streets is from the local dogs. Two years ago, a city-led campaign rounded up and sterilized 480 stray dogs, an

initiative many locals wish the current administration would continue.

Existing without motorized vehicles brings a set of challenges and costs, including the cost of carrying heavy things from the port to a project site, business or home using wheelbarrows and carts, and the extra cost of labor incurred in doing more things by hand. Not everyone appreciates the inconvenience that comes with the lifestyle, but it imbues a place with a distinct quality of life and refreshing mix of traditional and modern ways of living. One resident said the biggest piece of missing infrastructure is a bank -- people have bear the time and cost to travel nearly three hours by river to get to the nearest bank. When I asked a local teacher how he sees the town in 50 years, he responded that it was difficult to imagine in the light of the current trend of young people moving away for education or opportunity and not returning. Who will keep up the agricultural traditions that feed the town?



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Prospect Hill Monument



Source: Photo by Daderot (2012), public domain (CC0 dedication)

decisions that have defined cities across the United States.

This article connects the history of Union Square – its origins, industrial growth, demographic transitions, postwar decline, and 21st-century transformation – to current challenges and opportunities facing a neighborhood at the intersection of heritage and rapid change.

United States

A Neighborhood and the World:

How Union Square's Evolving Identity Reflects Global Urban Change

Charles Ofosu

Why Union Square Matters

Union Square in Somerville, Massachusetts, is a neighborhood where more than two centuries of American urban history coexist in one compact landscape. What was once Indigenous land became a colonial pasture, then a transportation crossroads, a working-class immigrant hub, a site scarred by highway-era planning. Today, it is a diverse, rapidly changing community shaped by transit-oriented redevelopment. Its evolution offers insight into the cultural layers, social struggles, and planning

Early History & Identity Formation

Long before Somerville incorporated as a town, the land that became Union Square was part of the territory stewarded by Indigenous peoples under the Squaw Sachem of Mistick.¹ After colonists acquired the land in 1639, the early settler, Ralph Sprague, established a farmstead near what is now the Square. For nearly two centuries, the area – then part of Charlestown – remained a rural landscape of fields, orchards, and pastures supplying Boston with milk and produce. This agricultural role inspired early names such as the “Stinted Pasture” and “Milk Row.”²

By the mid-18th century, a tavern stood at the crossroads, then called “Sand Pit Square,” named after nearby clay pits used for brickmaking. With only a few hundred residents in the broader area, Somerville remained a sparsely settled agrarian district.³

¹ MHC Reconnaissance Survey Town Report SOMERVILLE <https://www.sec.state.ma.us/divisions/mhc/preservation/survey/town-reports/smv.pdf>

² “The Ins and Outs of Union Square” A Self-Guided Walking Tour <https://s3.amazonaws.com/somervillema-live/s3fs-public/documents/historic/UnionSquareTour2.pdf>

³ MHC Reconnaissance Survey Town Report SOMERVILLE <https://www.sec.state.ma.us/divisions/mhc/preservation/survey/town-reports/smv.pdf>

The Revolutionary War elevated the area's significance. Prospect Hill, rising just above the Square, became a strategic fortification during the

1775–76 Siege of Boston.¹ Tradition holds that on January 1, 1776, General George Washington's troops raised one of the first American flags from the hilltop citadel.² During the Civil War, the area became a gathering point for Union Army

volunteers – giving the neighborhood the name "Union Square."³

Industrialization & Immigration Waves

Somerville separated from Charlestown and incorporated independently in 1842, just as industrialization was accelerating.⁴ Transportation innovations played a decisive role. The 1828 Warren Bridge and the opening of early rail lines in the 1830s funneled traffic along Washington Street, casting Union Square as a market center. By 1843, the Fitchburg Railroad operated a station near the Square, catalyzing industrial development on newly filled land in what became Boynton Yards.⁵

Factories, brickyards, slaughterhouses, and glassworks proliferated. By the 1870s, substantial wood and brick commercial blocks lined Somerville Avenue, Washington Street, and Bow Street, forming the city's earliest downtown core.⁶

Immigration shaped the neighborhood's cultural tapestry. Irish immigrants fleeing famine contributed significantly to the early built environment, working in local industries and constructing triple-decker housing typical of the region.⁷ Italians, Polish, and other Europeans followed by the early 20th century, establishing churches, grocery stores, and social clubs that animated the district. By 1940, two-thirds of

¹ Scott Roberto (2025). A Peek at the Past: Union Square <https://bostonguide.com/article-78549-a-peek-at-the-past-union-square.html>

² Scott Roberto (2025). A Peek at the Past: Union Square <https://bostonguide.com/article-78549-a-peek-at-the-past-union-square.html>

³ Scott Roberto (2025). A Peek at the Past: Union Square <https://bostonguide.com/article-78549-a-peek-at-the-past-union-square.html>

⁴ Scott Roberto (2025). A Peek at the Past: Union Square <https://bostonguide.com/article-78549-a-peek-at-the-past-union-square.html>

⁵ "The Ins and Outs of Union Square" A Self-Guided Walking Tour <https://s3.amazonaws.com/somervillema-live/s3fs-public/documents/historic/UnionSquareTour2.pdf>

⁶ City of Somerville <https://web.archive.org/web/20100502230144/http://www.somervillema.gov/Section.cfm?org=OSPCD&page=1376>

⁷ Somerville's Union Square: Historic Crossroads of Commerce <https://s3.amazonaws.com/somervillema-live/s3fs-public/documents/historic/hpc-union-square-tour-brochure-11-09-2010.pdf>



Historic Union Square (circa 1911) – Old and New Union Square Stations

Source: public domain (via Wikimedia Commons)

Somerville's housing stock consisted of two- and three-family homes.⁸

The absence of early zoning allowed homes, shops, and factories to intermingle organically, producing a walkable, mixed-use streetcar suburb whose texture remains visible today.⁹

⁸ Trends in Somerville: Housing Technical Report September 2009 <https://www.somervision2040.com/wp-content/uploads/sites/3/2018/11/Housing-Trends-Report-Final.pdf>

⁹ Union Square Neighborhood Plan - Somerville by Design. (n.d.). <http://www.somervillebydesign.com/wp-content/uploads/2016/08/Union-Square-NP-FINAL-WEB.pdf>

Highways, Decline, and Community Activism

The post-World War II decades brought profound upheaval. Like many northeastern cities, Somerville experienced population loss as middle-class families moved to automobile-oriented suburbs, aided by GI Bill mortgages and expanding regional highways.¹ Streetcar lines were removed by 1958, and commuter rail stations soon closed. As transit options diminished, Union Square lost its advantage as an accessible hub.²

Industrial decline accelerated disinvestment. Major employers shut down or relocated, shrinking Somerville's tax base. Aging triple-deckers increasingly became absentee-owned rentals with deferred maintenance. By the 1970s, the city faced severe fiscal stress and gained the unfortunate nickname "Slummerville."^{3,4}

Highway planning caused lasting damage. The proposed Inner Belt (I-695) would have cut through southern Somerville, including areas directly adjacent to Union Square.^{5,6} In anticipation, the Brickbottom neighborhood was razed in 1950, displacing hundreds of families and erasing an entire working-class community.^{7,8} Persistent community opposition – part of a broader anti-highway movement across Greater Boston – ultimately stopped the highway's construction in 1970.⁹ Though the Inner Belt was never built, it left a scar of vacant lots and social disruption.¹⁰

Yet amid hardship, community resilience took root.¹¹ The War on Poverty spurred new local

¹ Trends in Somerville: Population Technical Report April 2009 https://www.somervision2040.com/wp-content/uploads/sites/3/2018/11/Population-Trends-Report-5-19_Final1.pdf

² Going Green In Union Square <https://www.leventhalmap.org/articles/going-green-in-union-square/>

³ "The Ins and Outs of Union Square" A Self-Guided Walking Tour <https://s3.amazonaws.com/somervillelma-live/s3fs-public/documents/historic/UnionSquareTour2.pdf>

⁴ slummerville / changing Somerville <https://www.newspapers.com/article/the-boston-globe-slummerville-changing/121831904/>

⁵ Bencks, J. (2013, May 15). Somerville's Inner Belt: A history of a highway that never was. *WBUR News*. <https://www.wbur.org/news/2013/05/15/somerville-inner-belt-history>

⁶ The Inner Belt - Cambridge Historical Society. (n.d.). <https://historycambridge.org/innerbelt/history.html>

⁷ The Inner Belt Hub <https://historycambridge.org/history-hubs/inner-belt-hub/>

⁸ "The Ins and Outs of Union Square" A Self-Guided Walking Tour <https://s3.amazonaws.com/somervillelma-live/s3fs-public/documents/historic/UnionSquareTour2.pdf>

⁹ Boston's Cancelled Highways. (n.d.). <http://www.bostonstreetcars.com/bostons-cancelled-highways.html>

¹⁰ The Inner Belt Crisis: "Unpaving the Way" with Diversity and ... (2012). <https://participedia.net/case/619>

¹¹ Dreier, P. (1983). Community power and the politics of housing in Somerville. *Journal of Urban Affairs*, 5(3), 223–239. <https://doi.org/10.1111/j.1467-9906.1983>.

initiatives, including the formation of the Somerville Community Corporation (SCC) in 1969, which later became a key affordable housing and community development organization.¹² Immigrant arrivals from Brazil, Haiti, Central America, and South Asia began revitalizing the neighborhood in the 1980s and 1990s, opening bakeries, restaurants, and shops that reshaped the area's cultural and economic landscape.¹³

By the late 1990s, Union Square began to experience early signs of reinvestment fueled by the Boston-area tech boom and rising demand for centrally located housing. While still a working-class community, it was on the verge of major transformation.¹⁴

The Green Line Era & Contemporary Transformation

The opening of the MBTA Green Line Extension (GLX) in March, 2022, marked a historic turning point for Union Square.¹⁵ After decades of advocacy, the neighborhood finally gained direct subway access, reconnecting it to Boston's rapid transit network and fulfilling long-delayed transit equity goals.

Anticipating this shift, Somerville adopted the Union Square Neighborhood Plan (2016),¹⁶ which envisions high-density mixed-use development, public realm improvements, and new employment spaces while preserving historic character. The city also selected US2 (Union Square Station Associates) as a master developer to coordinate redevelopment of strategic parcels.¹⁷

In Boynton Yards and the immediate station area, new life-science buildings, creative office spaces, and housing are rising on former industrial land.¹⁸

tb00118.x

¹² Rubin, H. J. (1981). Community organization and social policy: Somerville's grassroots response to urban decline. *Urban Affairs Quarterly*, 17(1), 65–88.

¹³ Trends in Somerville: Population Technical Report April 2009 https://www.somervision2040.com/wp-content/uploads/sites/3/2018/11/Population-Trends-Report-5-19_Final1.pdf

¹⁴ Trends in Somerville: Economic Trends Technical Report June 2009 <https://www.somervision2040.com/wp-content/uploads/sites/3/2018/11/EconomicTrendsReport1.pdf>

¹⁵ Namu Sampath (2022). The Green Line Extension Union Square Station opens in Somerville <https://www.wickedlocal.com/story/somerville-journal/2022/03/21/mbta-opens-glx-station-bringing-green-line-service-somerville/9455777002/>

¹⁶ USNP <https://www.somervillebydesign.com/wp-content/uploads/2016/08/Union-Square-NP-FINAL-WEB.pdf>

¹⁷ City of Somerville. US2 SELECTED AS UNION SQUARE MASTER DEVELOPER. <https://www.somervillelma.gov/news/us2-selected-union-square-master-developer>

¹⁸ Boynton Yards Life Sciences Lab Celebrates Grand Opening - SGA. (n.d.). <https://www.sga-arch.com/sga-designed-9-story-life-sciences-lab-building-boynton-yards-celebrates-grand-opening/>

Longstanding local businesses – such as Taza Chocolate and breweries – coexist with newer enterprises, including the eclectic Bow Market (opened 2018), which showcases micro-retail vendors and cultural events.¹

Union Square's unique culture remains highly visible. Annual celebrations like "What the Fluff?" – honoring the marshmallow spread invented locally in 1917 – highlight the neighborhood's playful identity.² Brazilian markets, Punjabi Sikh religious centers, Haitian churches, and Salvadoran eateries sit within blocks of trendy cafés and coworking spaces.

Yet these advances also amplify pressures.³ Housing costs have surged, driven by regional demand and proximity to Cambridge's innovation economy. Condo conversions and speculative investments challenge the housing security of working-class families and immigrant communities that revived the neighborhood in earlier decades.⁴

Local government and community organizations have responded with robust planning tools. Somerville strengthened its inclusionary zoning ordinance – requiring 20% affordable units in large developments – and expanded funding for its Affordable Housing Trust.⁵ Groups like Union United secured community benefit agreements emphasizing affordability, local hiring, and public spaces.⁶

Since 2000, the neighborhood's population and profile have, indeed, changed. Somerville's population has grown to about 81,000 (as of 2020), reaching its highest level in decades, albeit still below the 1940 peak.⁸ The city remains youthful (median age ~32) and highly educated, with many students and young professionals drawn to areas like Union Square.

¹ Sandrine Deschaux (2025) Union Square Somerville Redevelopment: A New Cultural Hub <https://sandinedeschaux.com/blog/union-square-somerville-the-new-epicenter-of-creativity-cuisine-and-commerce>

² The Somerville Times. (2025). What the Fluff? A Tribute to Union Square Innovation Festival Turns 20 this Weekend <https://www.thesomervilletimes.com/archives/142835>

³ Jake Blumgart (2014) The City Where Real Estate Developers and Housing Activists Agree to Agree <https://nextcity.org/features/the-city-where-real-estate-developers-and-housing-activists-agree-to-agree>

⁴ Somerville Office of Strategic Planning and Community Development. (2009). *Trends in Somerville: Housing Technical Report* (September 2009). <https://www.somervillema.gov/reports/housing2009>

⁵ Mayor Katjana Ballantyne. (2025). Zoning for the Future: How Somerville Is Turning Policy into Progress. The Somerville Times. <https://somernova.com/news/zoning-for-the-future-how-somerville-is-turning-policy-into-progress/>

⁶ Somerville CDC <https://www.somervillecdc.org/our-properties/#%7E:text=Our%20Properties%20,income%20households%20in%20Somerville>

⁷ Union United <https://www.caasomerville.org/news-items/2017/9/12/union-united>

⁸ Dr. Andy. (2025). What to Know About Somerville: Population Culture Laws Politics Business and Healthcare <https://detoxinmassachusetts.com/ma/somerville/>

Union Square Station at opening day March 2022



Source: Photo by [Wicked Local](#)

Union Square today is a place of contrasts: historic triple-deckers beside glass-and-steel labs, long-standing immigrant shops next to upscale restaurants, and a culture of grassroots activism that shapes negotiations with developers. The neighborhood's identity continues to evolve as it balances growth, equity, and heritage.

Planning Lessons and Global Relevance

Union Square's layered history illustrates several lessons that resonate far beyond Somerville. Its evolution demonstrates how transportation investments, immigration, community advocacy, land-use patterns, and affordability policies shape the long-term trajectory of cities. The following five themes are echoed across global metropolitan areas facing similar pressures of growth, change, and cultural preservation.

i. Transit shapes neighborhoods for generations.

Union Square's experience underscores the powerful, long-term influence of transportation systems. When streetcar and rail service were removed in the mid-20th century, the neighborhood gradually lost accessibility, jobs,

and investment. The absence of reliable transit isolated residents and contributed to economic decline. Nearly seven decades later, the reintroduction of high-quality transit through the Green Line Extension reversed the decline, sparking renewed development, employment growth, and public interest. This transformation aligns with international examples – from London’s Overground expansion to Bogotá’s BRT corridors – showing how sustained mobility access is essential to neighborhood health and opportunity.¹

2. Immigrant entrepreneurship sustains urban vitality.

Union Square’s resilience has long been supported by immigrant communities who reinvigorated the local economy during multiple waves of disinvestment. Brazilian, Haitian, Central American, South Asian, and earlier European immigrant groups opened shops, restaurants, and community institutions that stabilized the area socially and economically. Many global cities, including Toronto, Lisbon, and Melbourne, similarly rely on immigrant entrepreneurs to maintain street-level vibrancy and diversify local business ecosystems.²

3. Community activism can reshape major planning decisions.

The successful fight against the proposed Inner Belt highway shows how resident organizing can fundamentally alter infrastructure planning. Grassroots coalitions prevented large-scale demolition and helped shift regional priorities toward public transit. Cities from Seoul³ to San Francisco have witnessed similar outcomes where civic pressure redirected urban policy and encouraged more people-centered development.

4. Transit-oriented development must integrate anti-displacement strategies.

While new transit brings opportunity, it also raises land values and housing costs. In Union Square, inclusionary zoning, affordable housing trusts, and community benefit agreements emerged to counteract displacement risks. These tools mirror global approaches in cities like Vancouver and Vienna, showing that transit-oriented development is most equitable when paired with strong affordability and social protection.⁴

5. Mixed-use, walkable neighborhoods remain inherently resilient.

Union Square’s historic pattern of closely spaced homes, small businesses, and interconnected streets has supported adaptability across centuries. This organically developed mix is exactly what many planners now aim to create through contemporary form-based codes and 15-minute city strategies. Its endurance offers a reminder that flexible, human-scale neighborhoods remain the backbone of sustainable urban life.

Conclusion

Union Square’s story is one of resilience, adaptation, and continuous reinvention. From its agricultural beginnings to its industrial heyday, through mid-century hardship and today’s Green Line-era transformation, the neighborhood reflects the dynamic interplay of planning decisions, demographic change, infrastructure investments, and community activism. Its experience offers valuable lessons for planners around the world seeking to balance growth with inclusion and heritage.

As the Square enters a new chapter defined by transit access, innovation, and cultural diversity, its future will depend on how well development can support—not supplant—the communities that have shaped it for generations.



¹ How the world’s oldest transport network is changing to embrace ... (2025). <https://worldcitiescultureforum.com/city-project/how-the-worlds-oldest-transport-network-is-changing-to-embrace-cultural-diversity/>

² WMR 2015 - Immigrant Entrepreneurship in Cities - IOM. (n.d.). <https://www.iom.int/resources/immigrant-entrepreneurship-cities>

³ Transition of state involvement in community building in Seoul ... (n.d.). https://www.academia.edu/38045518/Civic_urbanism_and_the_state_Transition_of_state_involvement_in_community_building_in_Seoul_South_Korea

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⁴ Ling, C., Chen, Z., Yang, J., & Yang, T. (2025). Evaluating inclusive transit-oriented development with location affordability and its influencing factors. *Transportation Research Part A: Policy and Practice*, 201, 104672.

Planning and Management Division, where he published *Planning for Resilience: How the FEMA Act of 2025 Transforms Disaster Recovery and Mitigation*. His broader academic and professional interests center on sustainable development, climate resilience, and the role of planning in building equitable, future-ready cities.

AI Disclosure

Artificial intelligence tools were used solely to proofread this article and to check for spelling, grammar, clarity, potential hate speech, confusion, and other unprofessional content. All ideas, analysis, and narrative content are the author's own.

Artificial Intelligence

The Repetition Paradox: Why Planning Systems Advance While Planning Workflows Do Not

Rohith Kanagaraj

Abstract

Urban planning has experienced substantial conceptual and institutional advancement, yet the operational routines that support plan-making have remained largely unchanged. This paper examines what is termed the *repetition paradox*: the persistence of manual, repetitive workflows despite the maturation of planning systems and the rise of data-rich smart city infrastructures. This two-part review first synthesizes literature demonstrating that master, regional, and local plans rely on nearly identical analytical sequences, differing primarily in spatial scale rather than methodological structure. The second part evaluates contemporary applications of artificial intelligence in urban contexts, revealing that current deployments overwhelmingly focus on sensing, classification, and data acquisition rather than on the procedural tasks central to planning practice. Drawing from this foundation, three prototype AI systems developed within URBX Labs—AffordAI, Flow, and Voice—are presented as exploratory efforts to examine the potential for workflow-level automation. The paper discusses the insights and limitations that emerge from these prototypes and outlines the

conceptual basis for advancing automation within planning workflows.

Keywords: urban planning workflows, automation, artificial intelligence, prototype systems, planning methods

i. Introduction

Urban planning is often described as an evolving discipline—methodologically richer, institutionally stronger, and technologically better equipped than at any earlier point. Yet these advancements coexist with a quieter, more persistent reality: the everyday work of planners continues to rely on labor-intensive routines that have changed very little over several decades. Data must be gathered, organized, interpreted, mapped, and translated into proposals through a sequence of tasks that are remarkably consistent across planning scales. Whether developing a master plan, a regional strategy, or a local development plan, planners tend to follow the same procedural template, differing mainly in spatial extent rather than analytical approach. This enduring sameness is not an operational coincidence; it is a structural characteristic of planning practice.

Simultaneously, cities have witnessed a rapid expansion of artificial intelligence (AI) and computational tools. The rise of “smart cities” has normalized the deployment of sensors, automated classification models, geospatial extraction algorithms, and remote-sensing–driven monitoring systems. These technologies have substantially enhanced the ability of governments to observe and record urban phenomena with increasing precision. However, their influence remains concentrated in the domain of data acquisition rather than in the procedural stages of planning itself. AI has helped cities see better, but it has not yet helped planners work differently.

This disconnect forms the basis of the repetition paradox: planning systems exhibit progress, but planning workflows do not. While the technological imagination surrounding urban AI continues to expand, the analytical and interpretive routines that planners perform remain manual, repetitive, and time-consuming. Existing literature acknowledges fragments of this problem—from data overload to workflow inefficiency—but rarely frames it as a structural contradiction in the evolution of planning practice.

This paper addresses that gap by synthesizing literature on repetitive labor in planning and reviewing the current landscape of urban AI,

arguing that the field is technologically imbalanced. To bridge this disconnect, three exploratory prototypes developed within URBX Labs are analyzed to evaluate whether the repetitive components of planning workflows can be reorganized into automated, reproducible sequences.

2. Literature Review

Urban planning has always been a data-hungry discipline, but the workflow for turning raw urban information into spatial decisions remains slow, repetitive, and manually dependent. Even as cities adopt “smart city” technologies, the planning profession continues to operate with fragmented datasets, siloed departments, and labor-intensive processes that have barely shifted in decades. This gap—between the rapid evolution of sensing technologies and the stubborn stagnation of planning workflows—is consistently highlighted in contemporary literature. What becomes clear across reviews, domain studies, and real-world deployments is that AI’s current foothold in urban domains is overwhelmingly concentrated in measurement and monitoring tasks, not in the higher-order planning functions where cities struggle the most.

A large body of research in smart cities frames AI as a tool primarily for operational efficiency, real-time data processing, and urban sensing. Herath et al. (2022) review the trajectory of AI adoption from 2014 to 2021 and conclude that most applications cluster around mobility, surveillance, environmental monitoring, and IoT-enabled city operations. They point out that while the term “AI in cities” is often used ambitiously, the practical deployments are almost entirely oriented towards acquiring or analyzing basic spatial data rather than supporting policy design, land-use planning, or scenario evaluation. Wolniak et al. (2024) reinforce this pattern, characterizing AI in cities as an extension of smart-city instrumentation—effective for tracking and diagnosing surface-level conditions but rarely integrated into institutional planning systems.

One of the strongest examples of this imbalance is the remote-sensing literature. The last decade has seen explosive growth in deep-learning techniques for building extraction, land-use classification, and change detection from satellite or aerial imagery. Yuan (2024) documents this surge through a comprehensive survey of building-footprint extraction methods, showing a dense ecosystem of U-Net variants, Mask R-CNN models, transformer-based segmentation, and hybrid CNN-attention architectures. These approaches have matured to the

point of producing city-scale, reproducible datasets with high accuracy. Such work is technically sophisticated, but its output is narrowly focused: it produces high-quality layers that planners could use, yet rarely automates any meaningful step beyond generating the layer itself. The workflow still requires planners to manually integrate, interpret, digitize, and translate these layers into proposals or regulations. In other words, the data is automated; the planning is not.

Traffic sensing and mobility research show a similar pattern. Reviews such as Premaratne et al. (2023) synthesize a massive volume of studies on vehicle detection, classification, and counting using video data. These systems excel at extracting traffic metrics with high temporal granularity—vehicle volumes, speeds, anomalies. Lin et al. (2022) demonstrate robust deep-learning pipelines that can count vehicles in real time from CCTV streams. Yet the role of these systems remains observational. They inform traffic control centers, not long-range street design. They quantify movement, but they do not produce mobility strategies, cross-section redesigns, or accessibility plans. Again, AI is doing the measuring, not the planning.

IoT-based waste management research highlights the same trend. Studies like Hussain et al. (2024) describe the implementation of sensor-embedded bins, fill-level detection, and route-optimization systems. These systems reduce operational inefficiencies, but they sit entirely at the service-delivery end of the municipal chain. They do not address upstream waste-land allocation, facility siting, or behavioral interventions—areas where planning decisions have far more impact. Municipal deployments in India, such as sensorized bins in Chennai and automated waste-monitoring in Madurai, showcase the environmental and administrative value of such tools, but also reveal their narrow scope: they optimize existing systems rather than transforming planning capacity.

What is conspicuously missing across all these application domains is any substantial body of work that brings AI into the core of planning: zoning decision support, development control automation, feasibility analysis, policy simulation, urban design iteration, or scenario evaluation. Reviews by dos Santos et al. (2024) on AI for sustainable smart cities acknowledge this void directly, noting that despite decades of sensor proliferation, planning departments continue to rely on manual geoprocessing, spreadsheet-based assessments, PDF-based workflows, and case-by-case interpretation of development rules. The literature repeatedly highlights the fragmentation between

data-rich smart-city infrastructures and the operational planning ecosystem that continues to function as if nothing has changed.

This disconnect explains a deeper issue: planning workflows remain repetitive not because the tasks are inherently complex, but because the tools never evolved to meet the demands of contemporary cities. Data comes in faster, cleaner, and denser every year, but planning tools still require humans to re-enter, re-classify, re-interpret, and re-justify the same categories, rules, and evaluations. The absence of AI at the decision-making layer creates a bottleneck where all the sensing progress collapses into the same outdated workflows that planners have been using for decades.

Overall, the literature makes one thing unambiguous: AI has modernized urban sensing, but it has not modernized urban planning. The gap between measurement and decision-making is the real frontier—and perhaps the most consequential opportunity—for future AI systems in city planning.

3. Methods

3.1 URBX AffordAI — Prototype Workflow for Housing Affordability Automation

AffordAI is developed within URBX Labs as an early-stage prototype to test whether routine housing affordability assessments can be converted into a structured, automated workflow. The method follows a modular approach suited for exploratory AI development in planning. A curated set of commonly used affordability indicators is organized into a unified analytical feature space, ensuring consistency across demographic, economic, and spatial variables. These features are processed through a controlled predictive pipeline in which multiple modeling approaches are tested to estimate affordability stress patterns and their spatial expressions.

A user-controlled parameter interface allows adjustments to planning assumptions—income groups, accessibility factors, or regulatory constraints—without altering the underlying prototype architecture. The focus is on demonstrating process logic rather than producing authoritative outputs. The methodological intent is to test whether steps planners typically perform manually can be replicated through automated routines. This structured exploration helps evaluate the feasibility of shifting affordability assessments from repetitive geoprocessing tasks to standardized

AI-assisted workflows while keeping all proprietary configurations undisclosed.

3.2 URBX Flow — Procedural Automation of Land Use–Mobility Scenarios

Flow operates as a scenario-based test environment designed to examine how planning's most repetitive modeling tasks—land use and mobility interactions—can be transformed into automated, rule-driven processes. The methodology begins by assembling baseline spatial layers, zoning attributes, and transport networks into a simplified representation of urban structure. Through an interactive interface, users can vary planning levers such as development intensity, transit enhancements, or allocation settings.

The prototype sequences analytical operations that estimate shifts in accessibility, density, and mobility performance. These steps mirror standard procedures planners perform manually in GIS and modeling platforms, but in Flow they are reconfigured as automated routines to test reliability, repeatability, and clarity. The purpose is methodological validation: assessing whether established scenario workflows can be encoded as machine-readable processes. Flow therefore explores how the procedural backbone of land use–mobility planning can evolve toward automated, reproducible analysis.

3.3 URBX Voice — NLP-Based Systematization of Public Input Analysis

Voice is developed as a controlled exploration of how natural language processing can automate the repetitive interpretation of public participation inputs. A structured, anonymized text corpus simulates comments, submissions, and transcripts typically reviewed by planning agencies. The workflow extracts thematic clusters, identifies sentiment tendencies, and organizes recurring issues into structured summaries similar to those produced during consultation synthesis.

The prototype tests whether qualitative interpretation—which traditionally requires manual reading and coding—can be partially systematized into a repeatable analytical process. By aligning outputs with planning documentation standards, Voice evaluates how subjective feedback can be translated into consistent, reproducible insights. All internal datasets, models, and configurations remain fully protected.

4. Discussion

The three prototypes developed and tested within URBX Labs—AffordAI, Flow, and Voice—demonstrate that core planning tasks contain stable, repeatable logics that can, in principle, be structured into automated analytical routines. Their development reinforces the broader argument of this paper: while planning systems evolve institutionally and technologically, the workflows underlying plan-making remain unchanged, largely because no tools have been designed to target those workflows directly. These prototypes do not attempt to replicate the full spectrum of planning judgement or deliver authoritative outputs; instead, they test whether the routine, mechanical, and time-consuming segments of planning can be mapped into computational sequences.

The early findings across all three systems indicate that such translation is technically feasible. AffordAI shows that affordability assessments rely on standardized indicator sets and predictable modelling steps. Flow demonstrates that land use-mobility scenarios follow almost identical procedural sequences regardless of geography. Voice reveals that consultation synthesis consistently reduces to thematic clustering, frequency mapping, and sentiment interpretation. Across these domains, the prototypes affirm that planners repeat the same workflows not because the tasks require human reinvention each time, but because current tools do not automate these sequences.

At the same time, the prototypes expose the practical limitations that continue to shape the development of workflow-level automation. The most significant challenge lies in assembling and maintaining the large, multi-departmental datasets required for robust experimentation. Planning data remains dispersed across agencies, stored in incompatible formats, and often requires extensive cleaning before it can enter any analytical pipeline. These realities slow development, restrict scalability, and limit testing environments. The prototypes therefore operate on controlled datasets within the lab, a necessary constraint but one that highlights the infrastructural gap between planning institutions and the computational tools needed to support automation.

Another limitation relates to modelling generalisation. Since planning contexts vary widely across states and municipalities, the prototypes must avoid embedding assumptions tied to specific geographies. Achieving portable logic without oversimplification is an ongoing challenge. Similarly, the controlled interfaces and simplified

scenario structures used in the current systems are deliberately constrained to support methodological clarity, but they do not yet reflect the full breadth of real-world planning demands.

Overall, these prototypes should be interpreted as conceptual explorations rather than deployed systems. Their value lies in demonstrating that repeated planning workflows can be formalized, sequenced, and partially automated—providing early evidence that the repetition paradox can be meaningfully disrupted if workflow automation becomes a targeted research frontier.

5. Limitations and Future Work

The prototypes developed within URBX Labs remain exploratory and are tested within controlled laboratory conditions. Their development highlights significant limitations that must be addressed before workflow-level automation can be operationalized at scale. Foremost among these is the difficulty of assembling, cleaning, and synchronizing large datasets distributed across planning departments, each with its own formats, standards, and storage practices. These data constraints restrict both the robustness and generalizability of prototype testing.

Additionally, while the systems demonstrate that planning workflows contain stable procedural logics, translating those logics into universally applicable computational models remains challenging. Planning practices vary across jurisdictions, and encoding these variations without oversimplification is an ongoing task. Future work will focus on expanding test environments, enhancing cross-department data integration, and refining the procedural logic needed to support broader applicability.

6. Conclusion

While urban planning has benefited from substantial technological advancements in sensing and monitoring, its core workflows remain manually intensive, repetitive, and structurally unchanged. The prototypes developed within URBX Labs—AffordAI, Flow, and Voice—provide initial evidence that these workflows can be reorganised into automated, reproducible processes. Each system demonstrates that commonly repeated planning tasks, whether quantitative or qualitative, rely on stable procedures that can be encoded into computational logic.

At their current stage, these prototypes remain exploratory and are tested only within controlled laboratory conditions. They face real constraints, particularly in acquiring, integrating, and cleaning large datasets from multiple departments—an enduring barrier for any planning-oriented computational system. Despite these limitations, their development confirms that the gap between data-rich smart city systems and the stagnant workflows of planning is not inevitable but structural. Addressing this gap requires shifting research attention away from data acquisition and toward the procedural backbone of planning practice.

The findings suggest that workflow-level automation is both necessary and technically plausible. Continued refinement, broader testing environments, and improved institutional data infrastructures will be essential steps in advancing these prototypes into practical tools capable of transforming how planning work is carried out.



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